

REMARKS

In the Office Action, the Examiner withdrew the claims 6 – 8 from consideration and made the restriction requirement final, objected to the claims 2 – 5 for the use of the indefinite article as the first word of the claim, rejected claims 1 – 5 under the second paragraph of section 112, rejected claims 1 – 4 as anticipated by the Soth reference, rejected claim 5 as obvious over Soth, and cited additional art of interest but not relied upon.

Restriction Requirement

The claims 6 – 8 have been canceled from the present application in accordance with the Examiner's requirement.

Claim Objection

The claims have been amended to provide the definite article as the first word of the dependent claims as required by the Examiner. Applicants note that each claim is an independent grant of a patent right and as such the indefinite article is frequently used as the first word of the claim. Applicants' attorney has used the indefinite article at the beginning of claims for many years without objection.

35 USC 112, 2nd ¶

The claims have been amended to replace the offending language and thereby overcome the rejection. The electrical component is not a part of the claimed invention but is present as an environmental element and to provide a description of the function of the invention.

35 USC 102(b)

The **Soth** '959 reference discloses a feeder mechanism for a pick and place machine. Soth '959 has a shutter mechanism with a pair of spring blades that cover a pocket on a reeled tape. The spring blades are spread apart by the vacuum tip of the pick and place machine and then the spring blades are pulled from over the component by the cover tape 14. Two embodiments are disclosed, one as shown in Figure 1 and the second in Figure 3. The distinction between the two embodiments appears to primarily center on moving the spring blades are moved out of the way for servicing, as the first embodiment fails to disclose access

for servicing whereas Figures 3 and 4 show pivoting of the blades out of the way about a horizontal axis for service access. Both embodiments operate the same with regard to removing components from the tape pockets.

In further detail, three different ways of moving the spring blades 28 are shown. The first way is illustrated in Figure 2 of the reference where the spring blades are pushed apart by the vacuum tip which is on its way to the component on the tape. During this movement, the blades are pushed mechanically in a direction which is transverse to the advancing direction of the tape. However, this movement is not sufficient to clear the blades from over the pocket holding the component, since a further second movement is necessary to release components, particularly components larger than the tip of the vacuum spindle.

The second way of moving the spring blade is described for example in col. 3, lines 30 – 41 or in lines 8 – 15, wherein it is stated that the shutter and the blades together move axially (not transversely to the advancing direction of the tape) to move the spring blades out of the way and permit pick-up of the component, particularly for a component that has an upper surface area greater than the cross-sectional area of the vacuum tip.

The third way of moving the spring blades is described in conjunction with Figure 4 in the text in column 2, lines 16 – 19 and col. 3, lines 25 – 30. The blades may be tipped to the side to permit changing or servicing of the supply tape.

In addition, Soth '959 discloses that two blades are necessary to secure the component in place. By contrast, the present invention uses only one finger element.

Further, the finger of the present invention is manipulated electrically, rather than mechanically.

The claims have been amended to claim features that distinguish over the cited reference. As such, the Soth '959 reference does not disclose the claimed invention and the rejection is thereby overcome.

35 USC 103(a)

The Soth '959 reference teaches mechanically actuated movement of the spring blades. Such mechanical actuation requires additional mechanical devices that complicate the structure and may even interfere with the operation of the device. Here, the use of the

electrical actuation according to the invention simplifies the structure and operation of the device in a way not realized by the prior art. Such an unrealized advantage is the essence of invention.

Further, the piezoelectric material of the present invention flexes to move between the securing and releasing positions. Soth does not disclose sufficient flexing to move the blades free of the pocket on the tape, because Soth also requires sliding axial movement of the blades to clear the component for removal. The simple flexing of the present invention is a further simplification and improvement by the invention over the prior art.

The present piezoelectric strip need only be secured in place at one end to operate. No additional parts or machining or assembly is required. Soth, by contrast, shows complex mechanisms providing sliding movement and pivoting movement of the blades along with the forced flexing movement. The present invention is thereby simpler and less expensive to manufacture and assemble. This further shows the non-obviousness of the invention over Soth, for had Soth recognized the advances provided by the present structure, he would surely have chosen the present device over his construction.

As a further simplification, the present invention provides only a single strip to secure the components in place, whereas the Soth '959 disclosure requires two finger elements to hold the components. Accordingly, many different features not only distinguish the invention from the Soth '959 disclosure but also show the unrecognized inventive steps taken by the present inventor over that prior art of Soth.

The Soth '959 reference does not teach or suggest the changes that are provided in the present invention and so the invention represents a non-obvious improvement over the cited art.

Additional Art

The additional art cited by the Examiner but not relied upon is noted by the Applicants.

Conclusion

Applicants respectfully request favorable reconsideration and allowance of the present application.

Respectfully submitted,



Melvin A. Robinson (Reg. No. 31,870)

Schiff Hardin LLP

Patent Department

6600 Sears Tower

Chicago, Illinois 60606

Telephone: 312-258-5785

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ATTORNEY FOR APPLICANT

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